

What is claimed is:

- 1           1. In a molding produced by an injection mold assembly  
having a pair of molds including a mold surface forming a  
cavity having a preselected volume, at least one transfer  
5           surface for transferring a mirror surface formed on said mold  
surface to said molding, and a gate for filling said cavity with  
a molten material by injection, and by injecting said molten  
material into said cavity via said gate and then cooling said  
molten material, said injection mold assembly includes at least  
10          one vent hole having a preselected opening area, and at least  
one bore communicated to said vent hole for applying a  
preselected air pressure to said molding, and a step portion  
formed on said mold surface between said vent hole and said  
transfer surface.
- 1           2. A molding as claimed in claim 1, wherein either a  
pressure difference or an air pressure is generated between  
said transfer surface and a vent hole portion of said molding  
facing said vent hole to thereby cause said vent hole portion  
5           to sink.
- 1           3. A molding as claimed in claim 2, wherein said step  
portion is formed on said mold surface where said vent hole is  
present.
- 1           4. A molding as claimed in claim 3, wherein said step  
portion isolates said vent hole and said transfer surface.

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- 1 5. A molding as claimed in claim 3, wherein said step  
portion comprises a single step surrounding said vent hole.
- 1 6. A molding as claimed in claim 3, wherein said step  
portion comprise a single step similar in configuration to a  
contour of the mold surface where said vent hole is present.
- 1 7. A molding as claimed in claim 2, wherein said step  
portion isolates said vent hole and said transfer surface.
- 1 8. A molding as claimed in claim 2, wherein said step  
portion comprises a single step surrounding said vent hole.
- 1 9. A molding as claimed in claim 2, wherein said step  
portion comprise a single step similar in configuration to a  
contour of the mold surface where said vent hole is present.
- 1 10. A molding as claimed in claim 2, wherein said step  
portion comprises a projection.
- 1 11. A molding as claimed in claim 2, wherein said step  
portion comprises a recess.
- 1 12. A molding as claimed in claim 2, wherein said step  
portion is provided on said transfer surface.
- 1 13. A molding as claimed in claim 12, wherein said step  
portion comprises a pair of steps so configured as to sandwich  
a longitudinal surface of said transfer surface.
- 1 14. A molding as claimed in claim 12, wherein said step  
portion comprises a single step so configured as to surround  
said transfer surface.

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1 15. A molding as claimed in claim 2, wherein said step portion comprises a pair of steps so configured as to sandwich a longitudinal surface of said transfer surface.

1 16. A molding as claimed in claim 2, wherein said step portion comprises a single step so configured as to surround said transfer surface.

1 17. A molding as claimed in claim 2, wherein said step portion is tapered in a cross section.

1 18. A molding as claimed in claim 2, wherein said step portion is triangular in a cross-section.

1 19. A molding as claimed in claim 2, wherein said step portion is arcuate in cross section.

1 20. A molding as claimed in claim 2, wherein said step portion has a height greater than 0.1 mm inclusive.

1 21. In an injection molding method for producing a molding by using a mold assembly having a pair of molds including a mold surface forming a cavity having a preselected volume, at least one transfer surface for transferring a mirror surface formed said mold surfaces to said molding, and a gate for filling said cavity with a molten material by injection, and by injecting said molten material into said cavity via said gate and then cooling said molten material, said mold surface is formed with, outside of said transfer surface, at least one vent hole having a preselected opening area and at least one bore communicated to said vent hole for applying a preselected air

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pressure to said molding material, and the air pressure is continuously generated via said vent hole even after a pressure of said molding material in said cavity has dropped to zero.

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1 22. A method as claimed in claim 21, wherein either a pressure difference or an air pressure is generated between said transfer surface and a vent hole portion of said molding facing said vent hole.

1 23. A method as claimed in claim 22, wherein the air pressure is higher than an atmospheric pressure (about 0.1 MPa) inclusive, but lower than 2 MPa inclusive.

1 24. A mold assembly having a pair of molds including a mold surface forming a cavity having a preselected volume, at least one transfer surface for transferring a mirror surface formed on said mold surface to said molding, and a gate for  
5 filling said cavity with a molten material by injection, and injecting said molten material into said cavity via said gate and then cooling said molten material, said mold surface is formed with, outside of said transfer surface, at least one vent hole having a preselected opening area and at least one bore  
10 communicated to said vent hole for applying a preselected air pressure to said molding material, and at least one exhaust hole located at a position adjoining said vent hole, but not facing said transfer surface.

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10 causing a resin pressure to act on said transfer surface to  
thereby cause said resin to adhere to said transfer surface,

and then cooling said resin to a temperature below the softening point;

15 opening said mold assembly in order to allow a resulting molding to be taken out; and

lowering a temperature of at least one non-transfer surface of said resin below a temperature of said resin on said transfer surface during an interval between a beginning and an end of injection of said resin into said cavity.

1 31. A method of producing a plastic molding, comprising the steps of:

5 preparing a mold assembly including at least one transfer surface and at least one none-transfer surface formed on a surface other than said transfer surface, said transfer surface and said non-transfer surface forming at least one cavity;

injecting molten resin heated to a temperature above a softening point thereof into said cavity;

10 causing a resin pressure to act on said transfer surface to thereby cause said resin to adhere to said transfer surface, and then cooling said resin to a temperature below the softening point;

15 opening said mold assembly in order to allow a resulting molding to be taken out; and

forming a gas layer between at least one non-transfer surface of said resin and said mold assembly during an

interval between a beginning and an end of injection of said resin into said cavity.

1 32. A method of producing a plastic molding, comprising the steps of:

5 preparing a mold assembly including at least one transfer surface and at least one non-transfer surface formed on a surface other than said transfer surface, said transfer surface and said non-transfer surface forming at least one cavity;

10 injecting molten resin heated to a temperature above a softening point thereof into said cavity;  
causing a resin pressure to act on said transfer surface to thereby cause said resin to adhere to said transfer surface, and then cooling said resin to a temperature below the softening point;

15 opening said mold assembly in order to allow a resulting molding to be taken out; and

20 maintaining a portion of said mold assembly facing at least one non-transfer surface of said resin lower in temperature than a portion of said mold assembly facing said transfer surface until injection of said resin into said cavity ends.

1 33. A method of producing a plastic molding, comprising the steps of:





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